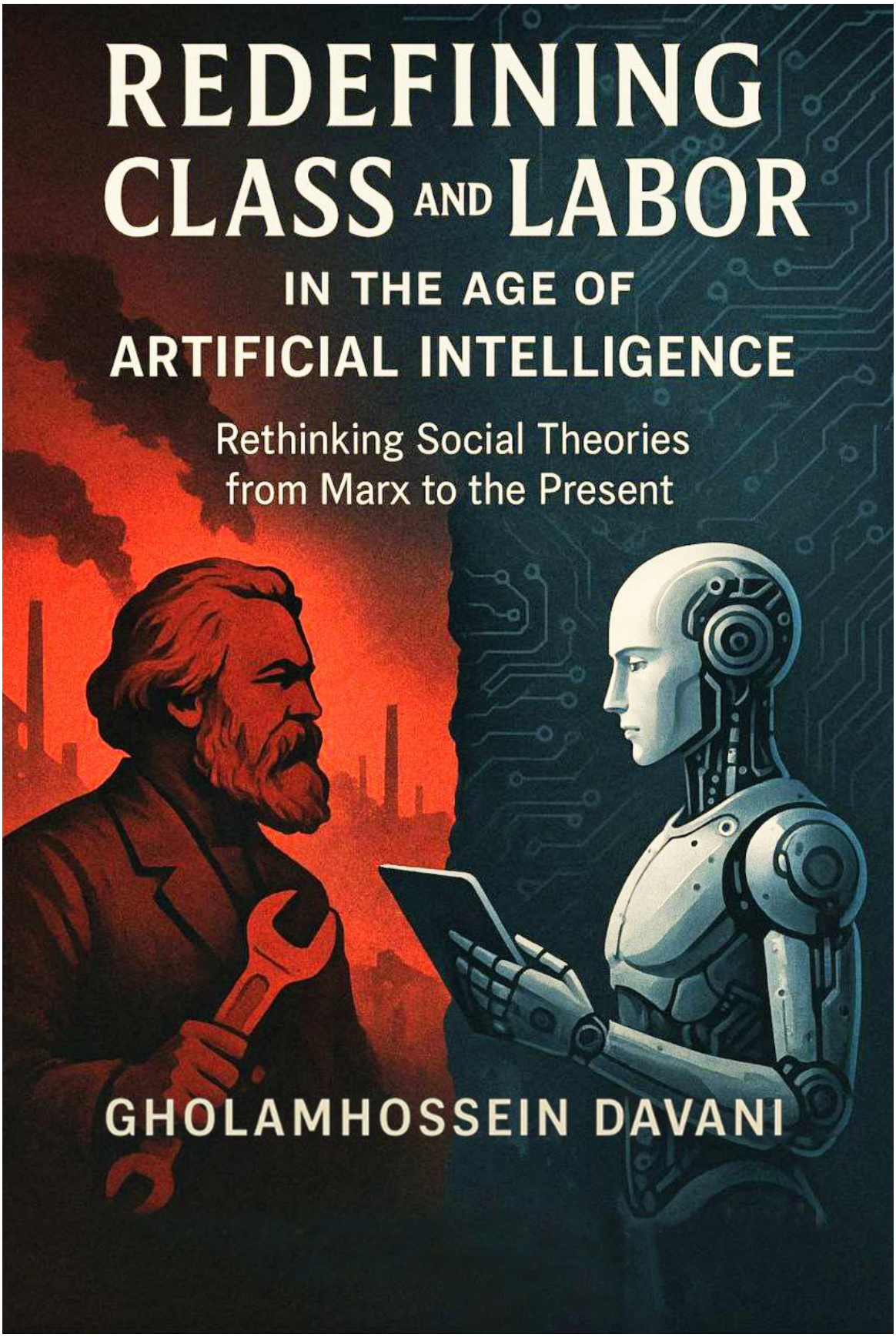
REDEFINING
CLASS AND LABOR
IN THE AGE OF
ARTIFICIAL INTELLIGENCE
Rethinking Social Theories
from Marx to the Present
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Redefining Class and Labor in the Age of Artificial Intelligence: Rethinking Social Theories from Marx to the Present

Introduction to the Discussion

The Second Industrial Revolution, characterized by the expansion of new technologies such as electricity, advanced machinery, and mass production, brought fundamental changes to the social class structures. Social classes are no longer defined solely by direct ownership of the means of production; instead, new complexities have emerged in the relations between labor and capital.

In this era, besides the working class and capitalists, the middle classes—comprising technical and managerial executives—play a significant role in the capitalist system. This middle class acts as an intermediary between capitalists and workers, taking control of the production process in a more organized way and managing the technological and administrative aspects of industry. Furthermore, the growing number of these individuals led to the broad formation of the middle class and also transformed the nature of workers; labor became more specialized, with workers involved in specific and partial tasks in the production process rather than producing entire products. This development increased workers' dependency on capitalists and managers, while simultaneously reducing their bargaining power.

As a result, the Second Industrial Revolution led to a redefinition of social classes and the creation of a more complex structure where social and economic roles became more diverse and specialized, and the boundaries between classes were reconstructed in new ways. The expansive growth of capitalism and the globalization of capital on one hand, and the emergence of technological empires whose raw materials are data and algorithms on the other, have caused a breakdown in traditional class structures. Although the nature of the working class—wage labor and dependency on work—remains unchanged, especially in what is now known as the "work and production society," from the perspective of lacking ownership of the means of production and services (including data and algorithms), class alignments have shifted.

The author, while affirming the core insights of Karl Marx and David Ricardo regarding the creation of surplus value by wage laborers (regardless of the forms this wage labor may take, such as stock options granted within the work and production society), argues that even in the digital economy and the age of artificial intelligence, this principle has not changed—except that the greatest surplus value is now generated not by traditional manual workers but by skilled technical employees. In this regard, since Marx and Marxism are neither prophets nor sacrosanct and all phenomena are in constant transformation, Marxists must fundamentally redefine the concepts of class, labor, and surplus value in today's world, which has entered the phase of the Fifth Industrial Revolution (the digital revolution accompanied by artificial intelligence), in order to avoid misguidance in their political-economic analyses.

It is evident that in this redefinition, special attention must be given to the roles of existing classes within the work and production society, including workers and all types of wage laborers, their gender, and especially unpaid labor (mostly domestic work). Based on this premise, the author seeks, through a re-examination of Marxist documents and concepts within the knowledge-based economy and the era of data capitalist empires—where corporate oligarchs and technological elites dominate the world—to offer a definition based on labor and production in the technological era and emphasize the role of the work and production society instead of the proletariat.

A Cyclical of The World's Industrial Revolutions 1740-2025

1. First Industrial Revolution (late 18th to mid-19th century)

- **Timeframe**: ~1760–1840
- **Key Features**: Mechanization, steam power, and textile manufacturing
- **Impact**: Shift from agrarian societies to industrial production, rise of factories

Worker Class:

- Former peasants and artisans forced off land due to **enclosure laws** and rural poverty
- Moved to **urban factories**, especially in textile, coal, and iron industries
- Included **men, women, and even children** working long hours in harsh conditions

Key Characteristics:

- Low wages, 12–16 hour workdays
- Unsafe and unsanitary factories
- No labor rights or unions (initially)
- Child labor widespread
- Rise of **Luddites** (workers who destroyed machines)

2. Second Industrial Revolution (late 19th to early 20th century)

- **Timeframe**: ~1870–1914
- **Key Features**: Electricity, mass production, assembly lines, steel, chemicals

Impact: Large-scale manufacturing, global trade expansion, urbanization

Worker Class:

- **Urban industrial workers** in large-scale factories, railroads, steel plants
- Growing class of **skilled and semi-skilled** workers
- Increasing numbers of **migrant and immigrant workers** (especially in U.S. and Europe)

Key Characteristics:

- Harsh conditions persist but begin to improve
- Rise of **trade unions** and **labor movements**
- Workers start demanding rights: 8-hour day, better wages, safety laws
- Class consciousness grows—**Marxist and socialist ideologies spread**

3. Third Industrial Revolution (late 20th century)

- **Timeframe**: ~1960s–1990s
- **Key Features**: Digital revolution—computers, electronics, telecommunications

Impact: Automation, the rise of information technology, internet

Worker Class:

- Mix of **industrial laborers** and **white-collar workers** (clerical, tech, service sector)
- Rise of **knowledge workers** in tech and information sectors
- **Outsourcing and globalization** shift factory work to developing countries

Key Characteristics:

- Decline in traditional manufacturing jobs in the West
- Rise in **service sector** and **precarious labor**
- Women enter workforce in large numbers
- Union power declines in many countries (especially the U.S. and U.K.)

4. Fourth Industrial Revolution (early 21st century – present)

- **Timeframe**: ~2011–2020s
- **Key Features**: Cyber-physical systems, AI, IoT, robotics, biotechnology

Impact: Smart factories, automation of knowledge work, merging of physical and digital worlds

Worker Class:

- **Digital workers**, gig economy participants (e.g., Uber, Deliveroo), remote freelancers
- Workers in **automation-prone jobs** (retail, logistics, manufacturing) face displacement
- High demand for **tech-savvy workers** (software, data science, AI)

Key Characteristics:

- Massive skill gap—low-skilled workers vulnerable
- Growth in **contractual, freelance, and platform-based work**
- Rise of **surveillance capitalism** and labor insecurity
- Unionization efforts in new sectors (e.g., Amazon, tech)

5. Fifth Industrial Revolution (emerging from 2020s onward)

- **Timeframe**: ~2020–present

Key Features: Human-centric technology, ethical AI, sustainability, collaboration between humans and machines (cobots)

Worker Class:

- Emphasis on **human-centered roles**: creativity, empathy, ethics
- Jobs like **AI trainers, ethics officers, digital wellness experts** emerging
- Focus on integrating **human-machine collaboration** (e.g., cobots)

Key Characteristics:

- Push for **inclusive, purpose-driven work**
- Mental health, well-being, and flexibility prioritized
- Hybrid and remote work widespread
- Worker empowerment via ethical frameworks and digital rights

Table comparing the worker class during each Industrial Revolution:

Industrial Revolution	Time Period	Worker Class	Key Characteristics
First	c. 1760–1840	- Displaced peasants, artisans, rural poor - Factory workers in textiles, coal, iron	- Long hours (12–16 hrs), low wages - Unsafe conditions - Child labor - No rights or unions
Second	c. 1870–1914	- Urban industrial workers - Skilled/semi-skilled labor - Immigrant laborers	- Trade unions emerge - Labor rights movements - Improved wages/hours - Spread of socialism/Marxism
Third	c. 1960s–1990s	- Factory workers (declining) - White-collar & service workers - Knowledge workers	- Automation rises - Global outsourcing - Decline in union power - Women join workforce massively
Fourth	c. 2011–2020s	- Gig workers (Uber, delivery) - Tech and AI workers - Displaced traditional workers	- Freelancing & precarious jobs - Remote work - Surveillance capitalism - Labor platform activism
Fifth (Emerging)	c. 2020s–present	- Human-machine collaborators - Creative, ethical, tech-savvy roles - Remote/hybrid workers	- Emphasis on well-being - Ethical tech, inclusivity - Mental health focus - Digital worker ri

Chapter One: Defining Social Classes – From Marx to Giddens

Introduction

This chapter introduces key theoretical frameworks, compares different perspectives, and presents an analytical discussion. Throughout the history of social thought, the concept of "class" has served as one of the most important conceptual tools for analyzing the structure of human societies and the dynamics of power, production, and inequality. From Marx to Giddens, Engels to Bourdieu, class has always been at the center of debates on social change, conflict, and political organization. Through a comparative review of classical and contemporary views on class, this chapter aims to show how our understanding of social classes has evolved over time and what analytical potential it holds for interpreting contemporary society.

At the outset of the discussion, let us clarify the most important point of contention between Marxists and supporters of the capitalist system — the definition of a commodity (regardless of its types and various forms)."

Definition of Goods-From the perspective of capitalist economists, a commodity or goods refer to any object, product, or service that has the ability to **satisfy a need or desire** and is typically capable of being **exchanged, bought, or sold**.

Types of Goods in Economics:

1. **Tangible Goods:** Physical items that can be touched or seen, such as a car, bread, or clothing.
2. **Intangible Goods (Services):** Non-physical items that fulfill a need, such as medical services, education, or consulting.

Based on Accessibility:

- **Free Goods:** Abundantly available in nature without cost (e.g., air, sunlight).

- **Economic Goods:** Scarce and require payment or effort to obtain (e.g., gold, gasoline).

Characteristics of Goods:

- They are consumable or usable.
- They have economic value.
- They can be traded in a market.
- They may be classified as either consumer goods or capital goods.

Marx's Definition of a Commodity

In **Volume I of *Capital***, Karl Marx provides a foundational and critical definition of a **commodity**, which serves as the basic unit of analysis in his critique of capitalism.

Quotation from *Capital*, Volume I, Chapter 1:

"A commodity appears at first sight a very trivial thing, and easily understood. Its analysis shows it to be a very strange thing, abounding in metaphysical subtleties and theological niceties. A commodity is, in the first place, an object outside us, a thing that by its properties satisfies human wants of some sort or another."

Analytical Summary of Marx's Concept:

1. Commodity as a Unity of Dual Aspects:

Marx defines a commodity as something that possesses **two fundamental aspects**:

- **Use-Value:** This refers to a commodity's ability to satisfy a human need or want. For example, bread satisfies hunger. Use-value is determined by the physical and functional properties of the object and exists independently of the market.
- **Exchange-Value:** This is the quantitative relationship by which one commodity can be exchanged for another (e.g., 1 coat = 2 pairs

of trousers). It reflects not the physical characteristics of the commodity but the **amount of socially necessary labor time** embedded in it.

2. The Substance of Value: Abstract Human Labor

According to Marx, the **source of value** in all commodities is **abstract human labor**. That is, value arises from the average amount of socially necessary labor time required to produce a commodity under normal conditions.

Value is not derived from usefulness, but from the **social labor** expended in production.

3. Commodity Fetishism

Marx introduces the concept of **commodity fetishism**, which means that in capitalist societies, the **social relationships between people** appear as **economic relationships between things**. Commodities seem to have intrinsic value and power, obscuring the human labor and social relations behind them.

In capitalism, people do not see that it is their labor that gives commodities value. Instead, they view commodities as having value in themselves, almost as if they possess magical or religious qualities.

According to Marxists, a commodity is not merely a physical object exchanged in markets. It is a **social form** that expresses how labor is organized and valued under capitalism. The analysis of the commodity becomes the entry point for understanding the contradictions of capitalist production and the alienation of labor.

1. Class Theory in the Thought of Karl Marx and Friedrich Engels

Marx and Engels, as founders of class analysis within a scientific-critical framework, define class not as a mere statistical or cultural category but as a social relationship based on ownership of the means of production.

For Marx, social classes in any historical mode of production are formed based on their relation to the means of production. In capitalist society, the two main classes are:

- **The Bourgeoisie**: Owners of the means of production (factories, land, capital).
- **The Proletariat**: Those who have nothing to sell but their labor power.

The fundamental basis of class conflict in Marx's view is the exploitation of the proletariat's labor by the bourgeoisie—wherein the capitalist profits from surplus value created by the worker, who is not paid the full value of their labor. Marx regarded class as a historical, fluid, and simultaneously economic and political phenomenon. He emphasized "class consciousness" and "class struggle" as key drivers of social transformation.

2. Max Weber and the Multidimensional Nature of Class Distinction

Unlike Marx, who emphasizes ownership and conflict, Max Weber contextualized class alongside concepts such as "status" and "power." According to Weber:

- **Class** is based on economic position and market opportunities (e.g., access to goods or income).
- **Status** relates to social honor or cultural prestige.
- **Power** concerns the ability to influence institutions and structures of authority.

Weber emphasized the multidimensionality of social inequality and asserted that class is only one element of social distinction. His perspective paved the way for modern analyses of cultural, ethnic, and gender-based inequalities.

3. Bourdieu and the Multiple Forms of Capital

French sociologist Pierre Bourdieu, drawing from both Marxist and cultural traditions, analyzed class through the lens of four types of capital:

1. **Economic Capital** (money, assets)
2. **Cultural Capital** (education, skills)
3. **Social Capital** (networks, relationships)
4. **Symbolic Capital** (prestige, recognition)

Bourdieu argued that classes are reproduced through "habitus"—internalized patterns of behavior. Thus, class inequality is not only perpetuated through income but also through lifestyle, taste, and education.

4. Poulantzas, Gramsci, and Class within the State

Nicos Poulantzas, combining Marxism and state theory, posited that class must be defined at the economic, political, and ideological levels. He emphasized that the state is not only an instrument of class domination but also a site of class struggle and alliance.

Antonio Gramsci introduced the concept of **hegemony** into class theory. For him, the ruling class does not govern solely through economic and state power but also through cultural and intellectual dominance, imposing its values upon other classes. Therefore, class struggle must also occur within the spheres of culture and education.

5. Anthony Giddens and Structuration Theory

In his structuration theory, Giddens conceptualized a dialectical relationship between social structures and individual agency. Social class, for him, is not a static structure but the outcome of continuous interactions between actors and social systems. He highlighted the changing roles of class in post-industrial societies and the importance of

analyzing modern institutions (e.g., media, technology, the welfare state) in understanding social inequality.

6. A Comparative View: Marx, Weber, Bourdieu

Theorist	Primary Criterion of Class Distinction	Theoretical Focus	Analytical Orientation
Marx	Ownership of the means of production	Class conflict	Economic–historical
Weber	Market opportunities and status	Multidimensional	Economic–cultural
Bourdieu	Cultural and symbolic capital	Social reproduction	Cultural–symbolic

7. The Need to Rethink Class in Today's World

In a world reshaped by the digital economy, information technology, artificial intelligence, and data-driven platforms, do traditional notions of class remain relevant? Have new classes emerged such as "data workers," the "platform class," or the "precariat"? These questions call for a reconsideration of class in light of technological and structural transformations in labor, ownership, and knowledge.

Chapter Two: The Definition of Labor and the Concept of Work—from Productive to Invisible Work

Introduction

In this chapter, we explore the historical, conceptual, and theoretical analysis of "work" through the lens of leftist thought, contemporary sociology, feminism, and postcolonial theories.
Work, as a fundamental human activity in the production and reproduction of life, is one of the key concepts in social sciences and political economy.
But what is "work"? Is it only an activity for which one receives wages? What about domestic, care, volunteer, digital, and informal labor?
This chapter analyzes the concept of work and labor from Marxist, feminist, and critical sociological perspectives, showing how our understanding of labor is intertwined with historical transformations, technology, and gender.

1. Work from Marx's Perspective: Human-Creative Activity

In *Capital*, Karl Marx analyzes work as the process of creating value and the central axis of production in capitalist society. According to him:

- **Work** is the conscious activity of humans to transform nature and produce the means of life.
- **Labor power** is the individual's potential capacity to perform work, which becomes a commodity in the capitalist market.

Marx draws a key distinction between **productive labor** (which creates surplus value) and **unproductive labor**. The worker, as the bearer of labor power, sells it to the capitalist for wages, but produces more value than they receive in return—this difference is known as **surplus value**.

2. Lenin, Hilferding, and Labor in the Imperialist Stage

Lenin, in his theory of imperialism, argued that the expansion of financial capital and export of capital transformed the structure of labor.

He emphasized that capitalism utilizes not just factory workers but also vast populations in colonies and semi-proletarian classes for profit generation.

Rudolf Hilferding, in *Finance Capital*, highlighted the complexity of labor structure in monopoly capitalism and its dependence on banks, corporations, and institutional control. In this stage, the boundary between productive and unproductive labor becomes more obscure.

3. Feminist Perspectives: Domestic, Care, and Invisible Labor

Feminist theorists such as **Silvia Federici**, **bell hooks**, and **Nancy Fraser** critique traditional Marxist analyses for ignoring domestic labor, child-rearing, eldercare, and emotional labor. These forms of labor:

- Generate value,
- Enable the reproduction of the labor force,
- But are not officially or economically recognized as "work."

Federici, in *Caliban and the Witch*, argues that early capitalism was built on the extraction of value from women's labor, yet this labor remained "invisible" and uncompensated.

4. Bourdieu and the Cultural Analysis of Labor

Pierre Bourdieu, through his theory of **habitus**, demonstrates that labor is not merely economic but also cultural and symbolic. For instance, some cultural professions (writing, art, education) may offer low income but high social prestige. This intersection of economic and symbolic capital shapes occupational choices and class patterns.

5. Labor in the Digital Age and Platform Economy

The emergence of the digital economy has fundamentally transformed the definition of labor:

- Social media users (on YouTube, TikTok, etc.) produce content without contracts or fixed wages.
- Uber drivers, delivery riders, and freelancers exemplify platform-based labor.
- The data produced by users becomes a form of **data capital** exploited without compensation.

David Harvey describes this trend as **accumulation by dispossession**, where corporations exploit individuals' time, data, and social capital.

6. Layered Labor Force: From Crenshaw to Wallerstein

Kimberlé Crenshaw, with her concept of **intersectionality**, explains how labor experiences are shaped by gender, race, class, and nationality. For example, a Black immigrant woman faces different labor market challenges than a native white man.

Immanuel Wallerstein, in the capitalist world-system theory, categorizes the labor force into three layers:

1. **Core**: Specialized and industrial labor with high wages.
2. **Semi-periphery**: Service or industrial labor with moderate stability.
3. **Periphery**: Informal, unstable, and cheap labor.

7- On the Conceptual Distinction Between Labour and Labour Power in Marx's Theory

Michael Heinrich is one of the most prominent contemporary scholars in interpreting and teaching Marx's economic thought. In his important book *An Introduction to the Three Volumes of Karl Marx's Capital*, he explains in a clear and analytical way the conceptual difference between *labour* and *labour power*, emphasizing its significance for understanding the theory of value and exploitation in capitalism.

7.1. Emphasis on a Conceptual, Not Linguistic, Distinction

Heinrich stresses that Marx deliberately distinguishes between the concepts of *labour power* and *labour*, and that this is not a linguistic play but a fundamental theoretical distinction. According to Heinrich, many misunderstandings of Marx's value theory stem from ignoring or conflating these two concepts.

7.2. Labour Power as a Special Commodity

In Heinrich's analysis, *labour power* is one of the most unique commodities in the capitalist system. This commodity only creates value when it is consumed—unlike most commodities whose use-value can be directly measured. The consumption of labour power is actual working activity, i.e., *labour* itself.

Key point: Labour as real activity occurs only in the production process, and it is there that *surplus value* is created.

7.3. Labour Power as the Source of Surplus Value

Heinrich explains that *surplus value*—the source of profit in the capitalist system—does not arise from the exchange of commodities but from the consumption of labour power in the production process. He writes:

"The capitalist buys labour power as a commodity, but the actual value-producing activity—labour—only becomes available to the capitalist when labour power is consumed in the production process."

7.4. Necessary and Surplus Labour Time

In Heinrich's analysis, the worker spends part of the working day producing value equivalent to their wage (necessary labour), and another part working unpaid for the capitalist (surplus labour). This distinction is based on the difference between the value of labour power and the value created by labour.

7.5. Critique of Misinterpretations

Heinrich criticizes those who ignore the concept of *labour power* or equate it with *labour*. In his view, such interpretations lead to a fundamental misunderstanding of how exploitation functions under capitalism—even among some Marxists.

7.6. Historical and Social Dimensions of Labour Power

Heinrich also emphasizes that *labour power as a commodity* only makes sense within the framework of capitalist relations:

- In pre-capitalist societies, the worker does not sell their labour power but often produces directly.
- In capitalism, the human becomes a seller of their own labour power—this marks the core of alienation under capitalism.

7.7. Theoretical Implications

According to Heinrich, this distinction lays the foundation for Marx's later analyses of:

- Capital accumulation
- The relation between labour and capital
- Capitalist crises
- Ideology theory (especially in connection with Althusser)

Michael Heinrich, by emphasizing the fundamental distinction between *labour* and *labour power*, seeks to provide a clearer understanding of Marx's theory of value. He regards this distinction not only as essential to scientifically grasping the capitalist system, but also as the key to understanding the hidden mechanism of exploitation that lies beneath the seemingly free and equal relations in the labour market.

8. Conclusion: What Is Work? Who Is a Worker?

Based on the analyses of **Marx**, **Federici**, **Giddens**, and **Harvey**, we can conclude that:

- Work goes beyond formal employment; any activity contributing to production, reproduction, or capital circulation is "work".
- Labor can be waged, domestic, platform-based, digital, voluntary, or even illicit.
- The classical distinction between “productive” and “unproductive” labor requires reconsideration in the era of digital economies, artificial intelligence, and big data

Chapter Three: What Is the Added Value of Labor?

In this chapter, we will address the issue of the added value of labor: How does labor create value? What is the difference between "use value" and "exchange value"? And what role does technology play in this process?

From the Labor Theory of Value to the Crisis of Value in Late Capitalism

1. Introduction

This chapter presents a strong introduction to the Marxist basis of the labor theory of value and traces the development from the labor theory of value to the crisis of value in late capitalism. It provides a historical and theoretical analysis of the concepts of value, use value, exchange value, and surplus value, drawing on the works of thinkers such as Karl Marx, Rudolf Hilferding, Charles Bettelheim, Immanuel Wallerstein, David Harvey, Louis Althusser, and critics of Marxism in the digital age.

The concept of value is one of the most fundamental yet complex ideas in political economy. Marx, through his development of the "labor theory of value," established his analytical foundation of capitalism on the principle that the value of any commodity arises from the socially necessary labor required to produce it. But does this theory still hold in the digital economy and the age of artificial intelligence? This chapter investigates that essential question.

2. Marx’s Labor Theory of Value

In Volume I of *Capital*, Marx distinguishes three types of value:

- **Use Value**: The ability to satisfy human needs; dependent on the material properties of the commodity.
- **Exchange Value**: A relative relationship between commodities in the market.

- **Value**: The amount of socially necessary labor time required to produce a commodity.

Marx's theory is based on the idea that labor is the sole source of value. In other words, the value of a commodity equals the socially necessary labor time to produce it. However, the capitalist employs the worker for longer than the time needed to reproduce the worker's labor power. This excess, unpaid labor time is what Marx calls **surplus value**, which is the source of capitalist profit.

3. Surplus Value and Exploitation

Surplus value appears in two forms:

- **Absolute Surplus Value**: Increasing working hours without increasing wages.
- **Relative Surplus Value**: Increasing productivity (e.g., through technology) without increasing wages.

In both cases, the worker produces more value than they receive in compensation, which constitutes exploitation. This analysis forms the moral and analytical foundation of Marx's critique of capitalism.

4. Althusser and the Epistemological Break: Critique of Economic Reductionism

Louis Althusser warns against relying solely on economics to explain value. He emphasizes the role of **ideological structures**, arguing that institutions such as education, media, and religion play a role in reproducing exploitative social relations. Therefore, surplus value is not only extracted through labor time but is reinforced through ideological control and social structures.

5. Charles Bettelheim and Socialist Economics: Value Without Markets?

Bettelheim critiques the socialist experiences of the Soviet Union and China by asking: Is it possible to determine value without market mechanisms? He argues that even in planned economies, value is

assessed through labor time and productivity. This means the labor theory of value is crucial not only under capitalism but also in socialism—though it requires redefinition.

6. The Digital Economy and the Crisis of the Value Theory
With the rise of digital technologies, the definition of value faces a crisis because:

- Many goods (e.g., music, videos, software) have zero marginal cost.
- Users work for free (e.g., on Google, Facebook, Instagram) yet generate value.
- User data has become a valuable commodity for companies.

David Harvey writes that digital capitalism exploits the unpaid labor of users to generate surplus value—accumulation without physical production.

7. Wallerstein: Value in the Global System
Immanuel Wallerstein analyzes value not at the national or factory level, but within the **world-system**. He argues that surplus value is extracted globally through the unequal division of labor between core and peripheral countries. For example, a Bangladeshi worker produces goods for a meager wage, but surplus value is accumulated in places like New York or London.

8. Crisis of Value and Post-Value Capitalism
Some post-Marxist theorists argue that in the age of automation, AI, and big data, human labor is no longer the sole source of value. Thinkers such as Nick Dyer-Witheford and Toni Negri suggest that **social life itself** has become a producer of value—through the attention economy, user participation, and online interactions.

9. Conclusion: What Is Surplus Value and How Is It Produced Today?

- The labor theory of value remains a powerful tool for analyzing exploitation, especially in traditional industrial and service sectors.
- However, in the digital economy, the source of value has become more complex, including emotional labor, data, and unpaid interactions.
- To analyze value in the age of AI, we need a **revised and expanded** Marxian theory of value.

Chapter Four: New Classes in the Digital Economy

Redefining Class in the Era of Platform Capitalism, Data-Driven Economies, and Immaterial Labor

1. Introduction

This chapter explores the emergence of new social classes in the digital economy. Drawing on the ideas of thinkers such as Karl Marx, Guy Debord, Antonio Negri, David Harvey, Silvia Federici, Nancy Fraser, Pierre Bourdieu, Anthony Giddens, Kimberlé Crenshaw, Homi Bhabha, and Immanuel Wallerstein, it redefines class structures in the digital age and asks:
Who constitutes the new working class in today's digital world?
How is technology reshaping class structures?

The advent of digital technologies, the internet, artificial intelligence, and platform economies has not only transformed economic structures but also challenged the concept of "class." The working class can no longer be defined solely as manual or industrial laborers. Today, millions of people work as freelancers, social media users, ride-share drivers, or online educators without fitting traditional classifications.

2. From Industrial Labor to Digital Labor: A Historical Transformation

In the industrial capitalist era, classes were typically divided into three categories:

- **Bourgeoisie**: Owners of the means of production
- **Proletariat**: Sellers of labor power
- **Petite Bourgeoisie**: Artisans, shopkeepers, independent professionals

In the digital age, new class categories have emerged:

- **Platform workers**: App-based drivers, digital service providers (e.g., Uber, Snapp, Divar)
- **Data laborers**: Users who create value through likes, clicks, shares
- **Creative/knowledge workers**: Content creators, designers, freelance translators
- **Care and emotional laborers**: Nurses, online teachers, psychological counselors

3. Attention Economy and New Forms of Exploitation

As Debord and Negri argue, in the “society of the spectacle,” humans work with their time, attention, and emotions. On social media platforms, users work without pay, while corporations reap vast profits from these interactions. This form of *immaterial labor* is often invisible, unpaid, yet highly profitable.

Nancy Fraser notes that in the digital economy, the lines between "production" and "social reproduction" have blurred. Childcare, social interactions, emotions, and even the body have become sources of economic value.

4. Feminist and Racialized Class Analysis

Kimberlé Crenshaw's concept of **intersecting oppressions** emphasizes the importance of analyzing class alongside race and gender — particularly in the digital economy, where women, migrants, and minorities often work precariously and without rights.

Silvia Federici highlights the role of **domestic and care labor** as the hidden pillar of capitalist production. In the digital economy, she argues, the **unpaid labor of women** has intensified.

5. The New Bourgeoisie: Digital Elites and Platform Lords

On the opposite end of the spectrum, we find a class of digital elites:

- **Platform owners**: Executives of Amazon, Google, Facebook
- **Venture capitalists and financializers**: Those who extract value from data, intellectual property, and speculation rather than production
- **Algorithms and AI**: New market and labor decision-makers controlled by the digital ruling class

Pierre Bourdieu considers this group the holders of **symbolic and cultural capital**, deriving power from controlling networks, information, and language.

6. Hidden Classes in a Globalized Economy

According to Immanuel Wallerstein, new classes must be analyzed on a global scale:

- **Global laborers**: Workers contributing to global markets but governed by unstable national laws
- **Shadow workers**: Data farm workers, freelancers in the Global South (e.g., India, Philippines) working for Western firms
- **Structurally unemployed and informal workers**: Those excluded from the digital economy or engaged in unstable platform work

7. Conclusion: Redefining Class in the Post-Industrial Age

In the digital economy:

- “Labor” is not necessarily physical, waged, or formal
- “Class” must be analyzed through a combination of immaterial, digital, emotional, and racial labor
- The boundaries between proletariat and bourgeoisie, worker and consumer, production and reproduction are collapsing

- The notion of the “digital working class” requires a new theoretical framework — one inspired by Marx, but also by feminism, racial theory, and postcolonialism

Chapter 5: The Role of Social Classes in the Age of Artificial Intelligence

Introduction

The emergence of Artificial Intelligence (AI) and Machine Learning technologies has not only transformed tools of production and services but also altered the nature and boundaries of social classes. Whereas in the industrial age, ownership of physical means of production and physical labor defined class divisions, today in the digital and AI era, ownership of data, access to algorithmic infrastructures, and analytical power over information have become new determinants shaping class structures.

In this chapter, drawing on thinkers such as Marx, Lenin, Shoshana Zuboff, Nick Srnicek, Anthony Giddens, Pierre Bourdieu, Nancy Fraser, and others, we reconsider the role of social classes in the AI era.

1. Changing Means of Production: From Machines to Algorithms

In Marxist tradition, means of production have always been a decisive factor in class structure formation. In the industrial economy, factories and machinery were owned by the capitalist class, while workers sold their physical labor.
In the AI era:

- Algorithms, learning models, and big data are the new means of production.
- Companies like Amazon, Google, and Microsoft play the historical role of factory owners: owners of digital means of production.
- The new workforce, in many cases, consists of hidden digital workers: those who label data, filter content, train models, or even simply produce data through their behavior.

2. The Hidden Working Class: From Proletariat to "Digital Proletariat"

Nick Srnicek explains in *Platform Capitalism* that platforms have eliminated physical production costs and focus instead on data collection and exploitation. The digital working class includes:

- Amazon Mechanical Turk workers
- Uber drivers and delivery gig workers
- Data labelers in Africa and South Asia who train AI models
- Social media users who unknowingly produce data for free
  Unlike industrial workers, these digital workers typically lack formal contracts, job security, or rights to organize.

3. The Rise of the Algorithmic Capitalist Class

According to Zuboff, a new class of "algorithmic overlords" has emerged:

- Owners of Google, Meta, Baidu, Tesla, Microsoft, and others
- Platform managers who accumulate wealth by analyzing human behavior and selling predictions
- This class not only owns digital tools but also "owns" the future of humans by predicting and guiding their behavior
  She calls this class the product of "surveillance capitalism," where power is exercised not through physical force but informational dominance.

4. Women and Class in AI: Feminism and Algorithmic Discrimination

Thinkers like Nancy Fraser, Silvia Federici, bell hooks, and Kimberlé Crenshaw emphasize that AI is neither neutral nor just. Algorithms reproduce class, racial, and gender discrimination.

- Women, especially women of color, are often at the lowest levels of the digital labor chain.

- The data used to train models is designed to favor white men.
- This means AI can institutionalize and perpetuate class and social discriminations even further.

5. Bourdieu and Cultural Capital in AI

Pierre Bourdieu’s concept of "cultural capital" shows inequality is not only economic but also cultural and symbolic. In the AI era:

- Those with technological knowledge, programming languages, and data literacy occupy higher social classes.
- "AI knowledge" today holds the power that "land ownership" had in feudalism or "factory ownership" had in industrial capitalism.

6. Globalization and Multi-layered Classes

World-systems theorist Immanuel Wallerstein’s framework remains relevant:

- In core countries, technology companies accumulate wealth.
- In peripheral countries, cheap (and often invisible) digital labor provides services.
  Today, we face intra-national and inter-national class divisions:
- A programmer in Silicon Valley and a data labeler in Bangladesh both contribute to AI structures but sit at opposite ends of the power and wealth spectrum.

Conclusion

In the AI era, social classes have neither disappeared nor become less important but have been redefined. Domination, ownership, and value are no longer rooted in factories but in servers, algorithms, and infrastructure monopolies. What Marx said about "means of production" today applies to platforms like Google and Amazon.
The role of intellectuals and radical writers today is to recognize and expose these new and hidden classes in the AI era.

Chapter Six: Who Counts as a "Worker" in the Age of Artificial Intelligence and the Digital Economy?

Introduction

In the Marxist tradition, a worker is someone who sells their labor power to a capitalist in exchange for wages to produce goods or services. This classic definition was quite tangible during the industrial era: workers labored in factories, farms, or railroads; they had set working hours; the means of production were owned by the employer; and their labor generated profit for the capitalist class.

However, in the age of the digital economy and artificial intelligence, the boundaries of this definition have become blurred. Is an Uber driver a worker? Does a user who produces data through their digital behavior but receives no wages count as a worker? Are those who train algorithms, yet remain invisible, part of the proletariat?

In this section, drawing on the perspectives of Marx, Lenin, Gramsci, Shoshana Zuboff, Nick Srnicek, Gayatri Spivak, Silvia Federici, Nancy Fraser, and bell hooks, we attempt to offer a new definition of the concept of "worker" in the digital era.

1. Work in the Data Age: From Physical Production to Information Production

In the digital economy, physical labor is gradually being replaced by "data labor." New forms of work include:

- **Click Work** or micro digital tasks (e.g., tagging images to train models)
- **Platform Work** (e.g., Snapp drivers, Digikala workers, freelance translators, etc.)
- **Behavioral Labor** (social media users whose behavior is turned into data)

In all these cases, workers create value, but often the traditional wage-labor relationship has disappeared or become hidden.

2. Invisible Labor and the De-Gendering of Work

Thinkers like Silvia Federici and Nancy Fraser emphasize a type of labor that is often invisible, unpaid, and gendered:

- Caring for children, the elderly, and domestic tasks
- Producing emotions, order, and a sense of belonging in digital spaces (e.g., managing WhatsApp groups or activity on Instagram)

In the AI era, producing emotions, attention, and behavior has acquired unprecedented economic value. Platforms turn these seemingly personal activities into profit via algorithms.

3. The Digital Worker: Without Contract, Rights, or Organization

- Unlike industrial workers, digital workers are often freelancers, contract-based, or invisible.
- They lack unions, insurance, job security, benefits, and sometimes even a professional identity.
- As Nick Srnicek puts it, platform workers are “work without a workplace.”

As a result, the working class in the digital age is fragmented, silent, and often unaware of its class position.

4. Zuboff and “Unpaid Behavioral Labor”

Shoshana Zuboff, in *The Age of Surveillance Capitalism*, argues that internet users—unaware—are unpaid laborers. They:

- Behave,
- Are tracked,
- Have their data recorded and analyzed,
- And ultimately are turned into profit.

Behavioral workers are trapped in a cycle where they lack even awareness of their exploitation.

5. Subjectivity and Refusal of Identification: Spivak's Theory

Gayatri Spivak asks, "Can the subaltern speak?" In the AI age, the question remains:
Can the digital worker become a subject? Can they develop class consciousness?

While industrial workers gained awareness through organizations, unions, and shared workplaces, digital workers operate in isolation and dispersion. Many do not even see themselves as "workers." Here, the role of the organic intellectual, in Gramsci's terms, becomes crucial.

6. Who is the New Worker?

Feature	Industrial Worker	Digital Worker
Workplace	Factory	Platform, home, virtual space
Tools	Machines, physical tools	Phone, laptop, data, software
Work Relation	Formal contract	Freelance, contract-free, informal
Wage	Defined, direct	Unclear, indirect, sometimes unpaid
Class Consciousness	Relatively high	Low, fragmented, invisible
Control	Physical supervision	Algorithmic, data-driven, invisible

Conclusion

In the AI era, work is redefined not only physically but cognitively, behaviorally, and emotionally. This redefinition expands the boundaries of the working class and complicates the Marxist definition of "selling labor power for wages."

Today's worker may:

- Produce data without knowing it,
- Be exploited without offices or managers,
- Yet be the most crucial creator of value in the digital economy.

Chapter Seven : Rethinking Class Struggle in the Age of Artificial Intelligence

Introduction

The concept of "labor society" (society of work) has its roots in classical political economy and became institutionalized with the Industrial Revolution and the expansion of capitalism. In this concept, labor is not merely a biological activity but the foundation for social relations, class structure, and the political-economic order of society. However, entering the 21st century—especially with the rise of artificial intelligence (AI), advanced automation, and platform economies—the notion of labor society has been transformed.

The advent of artificial intelligence (AI) and the intensification of global capitalism have radically transformed the nature of labor, production, and class relations. Classical Marxist theories of class struggle—premised on the binary opposition between the bourgeoisie and the industrial proletariat—must now be reconsidered in light of new labor configurations that have emerged in the digital and post-industrial economy. This chapter explores how the transition from rigid organizational hierarchies to transnational, networked production models within multinational holding companies has given birth to a new class formation: the "society of work and production."

1. From Industrial Hierarchies to Networked Capitalism

Traditional corporate structures were built upon vertical and horizontal organizational hierarchies. However, with the rise of digital technologies and global supply chains, these structures have given way to decentralized, networked models. Multinational holding companies now coordinate production and labor across borders through digital platforms, outsourcing, and algorithmic management. This shift represents not just a logistical transformation, but also a structural reorganization of the workforce itself.

2. The Society of Work and Production

Rather than disappearing, labor has become more fragmented, precarious, and digitized. The "society of work and production" encompasses a diverse range of laborers—remote IT specialists, gig workers, digital content creators, platform-based freelancers, and knowledge workers—whose labor is integral to contemporary capitalism. This new class formation challenges the narrow identification of the working class with the industrial proletariat. Labor in the AI age includes cognitive, affective, and immaterial forms of work that generate surplus value without traditional employment contracts.

3. AI and the Transformation of Labor Power

As Karl Marx famously distinguished between "labor" and "labor power," this conceptual differentiation becomes even more crucial in the AI age. Labor power is sold as a commodity, but its realization—"labor"—only occurs in the act of production. AI systems, through surveillance, algorithmic management, and task automation, mediate this process by reshaping how labor power is utilized. Platforms like Amazon Mechanical Turk, Uber, and Upwork extract surplus value not only by buying labor power but also by dictating how it is exercised, often invisibly.

4. New Class Formations and Exploitation Mechanisms

Unlike the traditional proletariat, members of the society of work and production often operate under the guise of autonomy and entrepreneurship. Yet, they remain subjected to exploitation through data extraction, unpaid emotional labor, and digital surveillance. These workers lack traditional labor protections and collective bargaining rights. The commodification of every aspect of life—from attention spans to emotional engagement—has expanded the reach of capital, embedding exploitation in new domains.

5.Global Labor Force, Employment, and GDP (2000–2024)

Year	Labor Force Person(Billion)	Employmen-Person (Billion)	Unemployment Rate (%)	Global GDP (USD Trillions)
2000	2.7	2.5	7.4	33.6
2005	2.9	2.6	8.0	47.2
2010	3.1	2.8	8.0	66.0
2015	3.3	3.0	8.5	75.2
2020	3.5	3.2	8.6	84.7
2023	3.6	3.3	8.3	100.0
2024*	3.7	3.4	8.1	105.0

*Note: 2024 figures are projections based on current trends and available data.

Notes:

- **Labor Force Growth**: The global labor force has grown steadily, increasing by approximately 1 billion individuals from 2000 to 2024.
- **Employment Trends**: Employment has mirrored labor force growth, with a consistent employment rate hovering around 91–92%.
- **Unemployment Rate**: The global unemployment rate has remained relatively stable, with slight fluctuations due to economic cycles and global events.
- **GDP Expansion**: Global GDP has more than tripled over the 24-year period, reflecting significant economic growth worldwide.

6.Global Labor Force by Education Level (2000–2024)

Year	Basic Education (%)	Intermediate Education (%)	Advanced Education (%)
2000	55	30	15
2005	52	32	16
2010	48	34	18
2015	45	35	20
2020	42	36	22
2023	40	37	23
2024*	39	37	24

*Note: 2024 figures are projections based on current trends and available data.

Notes:

- **Basic Education**: Typically includes primary education or lower secondary education.
- **Intermediate Education**: Generally refers to upper secondary education or equivalent vocational training.
- **Advanced Education**: Encompasses tertiary education, such as university degrees or equivalent higher education qualifications.(Trading Economics+1IndexMundi+1OECD)

Key Trends:

- **Decline in Basic Education**: The proportion of the labor force with only basic education has steadily decreased from 55% in 2000 to an estimated 39% in 2024, indicating improved access to higher levels of education globally.

- **Increase in Advanced Education**: There has been a notable rise in the share of the labor force with advanced education, growing from 15% in 2000 to a projected 24% in 2024.
- **Stability in Intermediate Education**: The percentage of the labor force with intermediate education has remained relatively stable, with slight increases over the years.

7.Labor Force with Advanced Education (% of Working-Age Population) – 2023

UK	EU	Australia	Canada	USA	Japan	Brazil	Indonesia	Mexico	India	China
87.29	**77.33**	**79.33**	**73.52**	**71.87**	**78.63**	**81.67**	**81.42**	**78.14**	**65.27**	**24**

Notes:

- **Advanced Education**: Refers to individuals who have completed tertiary education, including short-cycle tertiary, bachelor's, master's, or doctoral degrees, as classified by the International Standard Classification of Education (ISCED 2011).
- **Data Sources**:
  - **United Kingdom, European Union, Australia, Canada, United States, Japan**: Data sourced from the World Bank and Trading Economics.
  - **China**: Data sourced from Yicai Global.
  - **India**: Data sourced from Trading Economics.
  - **Brazil**: Data sourced from the World Bank.
  - **Indonesia**: Data sourced from Trading Economics.
  - **Mexico**: Data sourced from Trading Economics.

8. Estimated Monetary Value of Unpaid Work by Region (2000–2024) in USD Trillions

Year	North America	Europe	Asia (incl. Middle East)	Africa	Latin America	Total Global Estimate	World GDP (USD Trillions)	% of World GDP (Unpaid Work)
2000	1.8	2.2	4.5	0.7	1.3	10.5	33	31.8%
2005	1.9	2.4	4.8	0.8	1.4	11.3	41	27.6%
2010	2.1	2.6	5.3	0.9	1.5	12.4	63	19.7%
2015	2.3	2.8	6.0	1.0	1.7	13.8	75	18.4%
2020	2.6	3.1	6.9	1.2	1.8	15.6	84	18.6%
2023	2.7	3.3	7.3	1.3	1.9	16.5	100	16.5%
2024*	2.8	3.4	7.5	1.3	2.0	16.8	105	16.0%

Notes:

- **Regions include Middle East in Asia.**
- Values represent **estimated replacement costs** if unpaid work were paid at average regional wages.
- **World GDP** data based on IMF and World Bank estimates.
- % of World GDP shows unpaid work's economic significance (often surpassing 15–30%).
- Growth reflects increased recognition of unpaid labor, demographic changes, and wage inflation.
- COVID-19 pandemic increased unpaid care work, notably in 2020.

9. Ideological Blind Spots in Traditional Marxism

Many traditional Marxist theorists and activists continue to view class struggle through the lens of industrial-era relations, overlooking the significance of digital labor. This ideological inertia leads to analytical and strategic shortcomings. As Harry Braverman warned, technological advancements do not inherently empower workers; they often serve capital by deskilling labor and intensifying control. The failure to recognize new forms of labor leads to underestimation of the scope and nature of contemporary exploitation.

10. Globalization, Platforms, and the Rise of Digital Labor Markets

Globalization and platform capitalism have globalized the labor market while disembedding it from traditional legal and social frameworks. Workers from different geographies compete in real-time for tasks on platforms governed by algorithmic rules. The result is a transnational labor class, characterized by fragmentation, informality, and disposability. The platform economy's core logic is to minimize labor costs while maximizing data-driven productivity.

11. Case Studies of the New Working Class

- **Uber Drivers**: Marketed as independent contractors, they face algorithmic control, price manipulation, and lack of benefits.
- **Amazon Mechanical Turk Workers**: Performing micro-tasks for cents, they are invisible yet essential to AI training.
- **Digital Content Moderators**: Employed via outsourcing firms, they deal with psychological stress and lack recognition. These examples illustrate how exploitation has morphed into new forms, yet remains rooted in capitalist imperatives.

11. Toward a New Class Politics

Recognizing the society of work and production as a new class subject is essential. Political and labor movements must adapt their frameworks to engage this class. Strategies must include:

- Building digital unions and cooperatives
- Advocating for platform regulations and algorithmic transparency
- Reimagining social protections for informal and digital workers
  This reorientation is vital to revitalize class struggle in the age of AI.

Conclusion

Class struggle in the AI age is not obsolete—it has migrated, diversified, and restructured. Understanding the rise of the society of work and production is not only an academic necessity but a political imperative. The exploitation mechanisms of capitalism have adapted; so too must the analytical tools and organizing strategies of resistance.

Chapter Eight: The Digital Underclass and Algorithmic Proletariats

Introduction

In the era of the digital economy and artificial intelligence, new forms of exploitation and control over the working classes have emerged, which must be understood and analyzed through new conceptual frameworks. Concepts such as the digital underclass and algorithmic proletariats help us better comprehend the conditions and characteristics of these new social strata.

1. The Digital Underclass: Definition and Characteristics

The digital underclass refers to groups primarily operating within digital platforms and economies but deprived of job security, labor rights, and social benefits. These individuals:

- Often have temporary or project-based contracts;
- Receive meager or even non-monetary compensation;
- Are controlled and managed by algorithms and digital surveillance systems;
- Lack access to digital ownership resources and tools.
  Shoshana Zuboff, in her book *The Age of Surveillance Capitalism*, clearly demonstrates how this class has become a silent, highly controllable labor force under the shadow of algorithms.

2. Algorithmic Proletariats: Tools of New Exploitation

Algorithmic proletariats refer to groups of workers managed by complex algorithms and AI systems. Under these conditions:

- Work decisions, wages, hours, and even the type of work are automatically determined by algorithms;
- The worker is reduced to a “data resource” and an “executor of commands”;
- Opportunities for protest and negotiation decline, replaced by strict compliance with the system.
  Nick Srnicek emphasizes that this situation intensifies exploitation and diminishes workers' bargaining power.

3. Social and Psychological Effects on the Digital Underclass
Workers in this class face serious challenges, including:

- Feelings of job insecurity and instability;
- Social alienation and workplace isolation;
- Psychological pressure from continuous monitoring;
- Lack of labor rights and union representation;
- Weakening of class identity as a united social force.

4. Resistance and the Formation of New Labor Movements
Despite these conditions, new forms of resistance have emerged among digital workers and algorithmic proletariats:

- Formation of virtual unions and online protest movements;
- Struggles for data rights and personal information ownership;
- Efforts to redefine the concept of work and wages in the digital economy;
- Campaigns for job security and social protections.

5. Future Prospects
To achieve social justice in the digital era, it is necessary to:

- Update labor laws and regulations considering new technologies;
- Recognize the rights of digital workers;
- Develop new mechanisms for social support and job security;
- Introduce novel concepts of data ownership, participation, and economic governance.

Conclusion
The digital underclass and algorithmic proletariats represent new symbols of exploitation and social control in today's world. A precise understanding of these classes and the power structures behind them is key to comprehending future economic, social, and political transformations. While Marx's definition of wage labor, surplus value, and social classes provided a strong foundation for analyzing class structures and exploitation processes during industrial capitalism—

where the working class was the primary productive force, creating surplus value by selling their labor to the capitalist class and thus enabling capital accumulation—today, with the rise of the digital economy and fundamental changes in work organization and production, we no longer face a fixed, clearly defined working class but a “society of labor and production.”

This broad society includes all those involved in value production processes but who do not own the means of production or services.

This society of labor and production:

- Does not only include formal and contractual workers;
- But also platform users, data producers, freelancers, care workers, and even those working in informal and domestic sectors;
- And due to digitalization and smart technologies, the boundaries of traditional classes and old concepts of labor and wages have become largely ambiguous and flexible.

Therefore, class analysis must go beyond traditional worker-capitalist divides and examine the relationship between the “broad society of labor and production” and the “ownership of digital means of production, data, and technology.”.

This new perspective enables a more accurate and updated understanding of power relations, exploitation, and social resistance in the contemporary world, and opens pathways for justice-oriented policies in the age of the digital economy and artificial intelligence.

Chapter Nine: New Social Classes After the Third Industrial Revolution

Introduction

The Third Industrial Revolution, also known as the Digital Revolution, began in the late 20th century and significantly transformed the foundations of economic production and social organization. Powered by the development of digital technologies, personal computing, information and communication networks, and the internet, this era marked a shift from industrial capitalism based on manual labor and manufacturing to a post-industrial society centered around information, services, and knowledge.

Unlike the First and Second Industrial Revolutions, which relied on mechanization and electrification, the Third Industrial Revolution introduced automation, digital communication, and globalization on an unprecedented scale. As a result, the very nature of labor, capital, and social hierarchy has evolved, giving rise to new forms of social stratification and previously unseen classes.

9.1 Redefining Class in the Digital Age

Classical theorists such as Karl Marx, Max Weber, and Emile Durkheim defined social class based on ownership of the means of production, occupational roles, and access to power. However, in the age of digital capitalism, the determinants of class have shifted toward access to information, digital literacy, control over platforms, and capacity for innovation.

In this context, the concept of class must be redefined using contemporary criteria:

- ✓ Control over digital infrastructure and platforms
- ✓ Possession of digital and algorithmic knowledge

- ✓ Ability to create, analyze, and monetize information
- ✓ Participation in networked forms of production

The lines between producer and consumer, labor and capital, have blurred. A person might simultaneously be a consumer of digital content, a producer of data, and a laborer under algorithmic control.

Emergence of New Social Classes

1. The Information Class

This class includes individuals whose primary economic activity is related to the generation, processing, and distribution of information. This includes:

Software engineers and AI developers

Data scientists and IT specialists

System administrators and network engineers

Digital content creators and tech educators

They represent a new "intellectual proletariat" whose labor generates massive value for tech corporations but who may still lack ownership or long-term security.

2. The Creative Class

Popularized by urban theorist Richard Florida, the creative class encompasses those who work in fields that rely on creativity, design, and innovation:

- ✓ Digital artists, graphic designers, and animators
- ✓ Video game developers, VR/AR creators
- ✓ Cultural producers in digital media and entertainment
- ✓ Inventors, startup founders, and innovation consultants

Although this class is influential in shaping trends and culture, its members often face precarious employment, unstable incomes, and dependency on fluctuating platform algorithms.

3. The Techno- bourgeoisie

This new elite class has replaced the traditional industrial bourgeoisie. It comprises those who own, invest in, or control major digital platforms and technologies:

- ✓ Founders and CEOs of Big Tech firms (e.g., Google, Amazon, Meta, Tencent)
- ✓ Investors in emerging technologies (e.g., blockchain, fintech, AI)
- ✓ Proprietors of proprietary software, platforms, and algorithms
- ✓ Tech monopolists and global digital landlords

The techno- bourgeoisie derive their power from intangible capital: code, data, attention, and network effects. They influence politics, reshape labor markets, and control the infrastructure of modern life.

4. Platform Labor and the Gig Economy

The gig economy has given rise to a new class of digital laborers whose work is mediated by apps and platforms:

- ✓ Ride-share and delivery drivers
- ✓ Freelancers working on platforms like Upwork or Fiverr
- ✓ Remote service workers performing microtasks for AI training
- ✓ Online teachers and platform-based health providers

These workers often lack legal protections, unions, or job security. Their labor is controlled by algorithms and evaluated through customer ratings and platform metrics. They form a vulnerable and growing part of the global workforce.

5. The Digital Underclass

As digitalization advances, a segment of society remains excluded from its benefits. The digital underclass includes:

Those lacking access to digital infrastructure or education

- ✓ Elderly populations unfamiliar with new technologies
- ✓ Migrants, refugees, and marginalized groups without connectivity
- ✓ Displaced workers unable to reskill for the digital economy

This class experiences digital poverty and exclusion, which reinforces broader economic and social inequalities. The digital divide between classes is one of the defining issues of the 21st century.

6. Digital Elites and Algorithmic Managers

This group includes individuals who design, manage, and govern digital systems:

- ✓ Algorithm designers and data architects
- ✓ Platform moderators and information gatekeepers
- ✓ Cybersecurity policymakers and digital regulators
- ✓ Corporate strategists managing AI and data-driven decision-making

They operate behind the scenes but wield immense soft power in shaping consumer behavior, surveillance systems, and information flows.

Changing Forms of Inequality

Digital capitalism introduces new inequalities:

Ownership Inequality: Control of platforms and algorithms by a small elite

Skill Inequality: Digital literacy and education are not evenly distributed

Attention Inequality: Influence is concentrated in a few digital celebrities and influencers

Geographic Inequality: Tech hubs concentrate wealth while rural and Global South regions fall behind

These disparities are not only economic but also cultural and psychological, affecting social mobility, identity, and civic participation.

Theoretical Implications

From a Marxist lens, the techno-bourgeoisie resemble a new capitalist class owning digital means of production. The working class is fragmented, with some workers digitized and empowered while others are displaced.

From Weber's perspective, status and prestige now stem from digital credentials and knowledge. Bureaucratic control has shifted to algorithmic governance.

Following Bourdieu, we can speak of "digital capital" (technological skill, online influence) and "network capital" (connections in digital ecosystems) as new forms of symbolic power.

Conclusion

The Third Industrial Revolution has fundamentally transformed social structures, giving rise to novel forms of labor, capital, and inequality. Understanding these emerging classes—information workers, platform laborers, the technobourgeoisie, and the digital underclass—is essential for designing inclusive policies, educational systems, and labor regulations in the 21st century.

As we approach the Fourth Industrial Revolution, the configuration of class will continue to evolve. The key question remains: will digital transformation lead to emancipation and equality, or deepen exploitation and division?

Chapter Ten: The Fifth Industrial Revolution and the Re-Humanization of Technology

Introduction

The Fifth Industrial Revolution (5IR) marks a transformative stage in human history—one that prioritizes the re-humanization of technology. While the Fourth Industrial Revolution focused on speed, automation, and the fusion of digital and biological worlds, 5IR repositions humanity at the center of innovation. It envisions a future where technology serves people, rather than replacing them, integrating human creativity, empathy, ethics, and sustainability into advanced industrial systems.

This chapter explores the origin, nature, technologies, social implications, and global momentum of 5IR—examining how it reshapes work, power structures, values, and our relationship with machines.

1. Origins and Timeline

The concept of the Fifth Industrial Revolution began gaining attention in the early 2020s, particularly during and after the COVID-19 pandemic. The global crisis accelerated digitalization but also exposed deep social inequalities, mental health challenges, and environmental degradation—prompting thinkers, policymakers, and innovators to imagine a different kind of future.

Timeline Snapshot:

2011–2019: The Fourth Industrial Revolution (4IR) spreads across the globe.

2020–Present: Emergence of 5IR as a response to the social and ethical limitations of 4IR.

Key milestone: 2021 WEF discussions and European policy documents introduce the human-centric digital transition.

2. Core Features of the Fifth Industrial Revolution

2.1. Human-Machine Collaboration

Unlike the automation-centered approach of 4IR, 5IR focuses on collaborative robots (cobots)—systems that assist and enhance human capabilities rather than replace them. This new synergy values human insight, adaptability, and emotion alongside machine precision and speed.

2.2. Human-Centric and Ethical Innovation

Innovation in 5IR is not only technical, but ethical. AI and algorithms are now designed with:

Fairness and transparency

Data privacy and consent

Inclusion and accessibility for diverse populations

2.3. Sustainable Development

5IR deeply aligns with Sustainable Development Goals (SDGs). It promotes:

Green manufacturing

Circular economies

Renewable energy technologies

Climate-conscious innovation

2.4. Purpose-Driven Economy

Unlike shareholder capitalism, 5IR encourages a purpose economy—where businesses strive for positive societal impact, not just profit. This includes:

Social entrepreneurship

Employee well-being

Corporate digital responsibility (CDR)

3. Technological Backbone of 5IR

5IR builds upon the technological infrastructure of 4IR, but with a humanistic overlay. Key technologies include:

Artificial Intelligence (AI): With embedded ethical codes and social utility.

Internet of Things (IoT): Connecting smart homes, cities, and infrastructure for social benefit.

Blockchain: Used not just for finance but for transparency and trust in governance and supply chains.

Biotechnology & Genomics: Empowering personalized, ethical healthcare.

3D Printing: Enabling community-driven design and local production.

4. Societal Impact

4.1. Employment and Skills

5IR redefines work by combining digital fluency with soft skills. Creativity, empathy, and ethical reasoning become core workplace competencies. Human roles evolve as same as:AI trainers and auditors and Ethics officers ,Digital wellness facilitators ,

4.2. Education and Lifelong Learning

Education systems are expected to shift toward interdisciplinary and personalized learning, emphasizing emotional intelligence, environmental literacy, and digital ethics.

4.3. Mental Health and Well-being

Technology must now support mental health, not harm it. Platforms and apps are being redesigned to reduce addiction, promote mindfulness, and foster digital well-being.

5. Global Case Studies and Early Movers

Japan: Promoting human-robot symbiosis in healthcare and elder care.

European Union: Pioneering digital rights and sustainability through the Green Digital Deal.

Nordic countries: Leading in ethical AI and human-centered policy.

Africa & India: Innovating with low-tech, high-impact models in education and agriculture.

6. Challenges and Criticisms

Tech-washing: Risk of superficial ethics without structural reform.

Inequality: The human-centric model must reach the Global South.

Data sovereignty: Who owns and controls data in human-technology ecosystems?

Digital fatigue: Overreliance on virtual solutions may lead to disconnection.

7. Conclusion: Toward a Compassionate Tech Future

The Fifth Industrial Revolution offers an opportunity to reshape the future of humanity, placing values, empathy, and the planet at the heart of innovation. Its success depends not just on inventing smarter tools, but on fostering a deeper moral imagination—where the purpose of technology is to serve life, not dominate it.

As we advance through this new industrial era, societies must navigate profound choices. Will we use our technological prowess to entrench

inequality, or will we rise to co-create a more just, sustainable, and human-centered world?

What is meant by the contradiction of capitalist production according to Marx?

The concept of the contradiction of capitalist production is primarily analyzed by David Harvey (in both theoretical and historical aspects). Harvey emphasizes that the contradiction inherent in capitalist production lies at the core of Marx's concept of capital. This contradiction stems from the private ownership of the means of social production. At a certain stage of capitalist development, the contradiction between the socialized nature of production and its private ownership becomes apparent.

This contradiction essentially implies that, on an expanded social scale, capitalist production means that a few private owners control the means of production, while the majority produce socially. Harvey notes that this contradiction is deeply embedded in capitalist development and manifests in two fundamental forms:

1. The first form of this contradiction arises in the organization of production within a single unit (organization-based production), where the contradiction is between planning and the market.
2. The second form is the contradiction between multiple production units that are coordinated through the market, which is inherently unplanned and anarchic.

Key Points about the Contradiction of Capitalist Production:

- Harvey identifies this contradiction in various stages and periods of capitalist development: between the proletariat and the bourgeoisie, between capital and labor, and between planning and the market.
- Since the 1970s, there has been a transformation in class structure and imperialist strategies in the U.S., which Harvey examines.

- Classical Marxists often ignored this contradiction, viewing social production mainly through ownership and control. However, Harvey emphasizes the contradiction in both the form and nature of production itself.
- According to Harvey, the forms of this contradiction and its manifestations are historically specific, and we should not expect it to always appear in the same way.

Important Aspects of Harvey's Analysis:

- He argues that the contradiction of capitalist production does not inherently define capitalism but is a product of the mechanisms, structures, and crises of capitalism.
- The contradiction is internal to capitalism and defines its dynamics and crises over time.
- This contradiction results in capitalists competing to gain more profit, which leads to tendencies like devaluation of labor, resource exploitation, and environmental destruction.
- As firms compete in the market, they try to reduce production costs and increase profits, which can lead to labor exploitation, environmental degradation, and unsustainable development.
- The contradiction also leads to uneven geographical development and class fragmentation, rather than class unity.

Final Insight:

According to Harvey, in capitalist production, social relations are formed that constantly push toward the maximum exploitation of labor and nature, without consideration for long-term consequences. The contradiction lies in the fact that capital must continuously expand value while relying on finite resources, limited labor, and unplanned market forces. This ultimately makes the system unstable and crisis-prone.

As Engels puts it: “The forces that the capitalist system sets in motion eventually become uncontrollable.”

And as Harvey concludes (drawing on Marx): capitalist production inherently contains the seeds of its own decay.

A key point that modern Marxists must pay attention to is that, unlike traditional and Soviet Marxists, the fundamental contradiction of the capitalist system is not the conflict between workers and capitalists, but rather the irreconcilable contradiction between socialized production and individual ownership in its various forms—from classical industrial capitalism to digital capitalism based on new technologies such as artificial intelligence and electronic tools in the realm of labor and production

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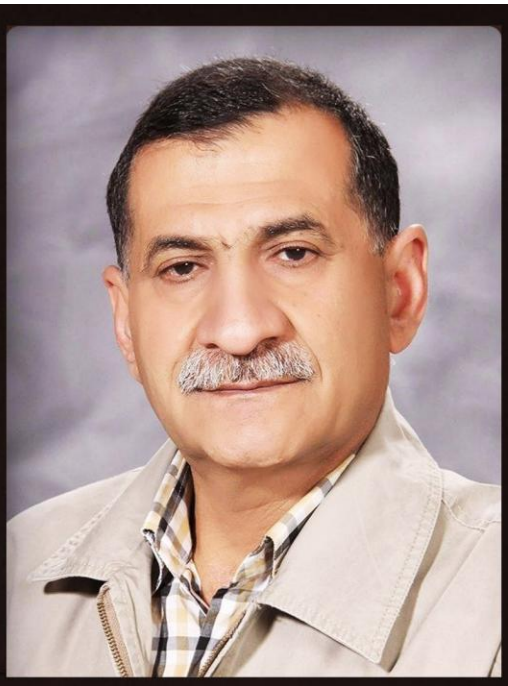

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ABOUT THE BOOK

In an era defined by the rapid advancement of artificial intelligence, traditional concepts of class, labor, and political economy are being transformed. This book reexamines the foundations of social theory—from Marx and Weber to contemporary thinkers—and offers a compelling critique of how automation, data capitalism, and allgorithmic power reshape the global workforce, social hierarchics, and economic resistance.

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